

Is there a causal link between L2 vocabulary and syntax?

Vivienne Rogers

Swansea University

EUROSLA 26
University of Jyväskylä



Swansea University
Prifysgol Abertawe

Outline

- 1 Background
- 2 Research Questions
- 3 Methodology
- 4 Results
- 5 Discussion & Conclusions

- How do L2 learners develop new features?
- L1 acquisition: link between syntax/ features and vocabulary size (Bates & Goodman 1997).
- Does this apply to L2?

Minimalism & the Lexicon

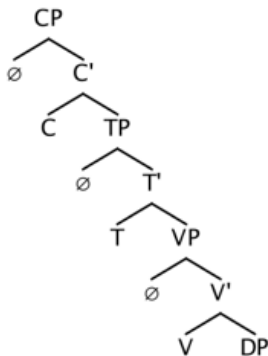
Ouhalla (1991:7-10) suggests

[T]here should in principle be a distinction between two notions of the lexicon, a grammatical lexicon which contains functional categories and which belongs to the domain of UG, [and] a mental lexicon which contains substantives and which exists independently of UG, that is an autonomous module of the mind/brain.

Emonds (2002): there is a 'syntacticon' and a 'mental dictionary'.

What is a functional feature?

Features that cause things to happen at a grammatical level but not necessarily seen in the morphology, e.g. gender, verb movement.



Lexical Bottleneck hypothesis

- Within processing literature, role of lexical development is seen as increasingly important.
- Hopp (2015) argues that if learners don't understand a word (frequency effects) they get stuck/ stop processing (causes a bottleneck).
- “greater demands on lexical processing may cause non-native like syntactic processing ... delay effects of structure building.”
- L2ers can process new features (e.g. gender) like native speakers but only if their lexicon is consistent.

What about in production?

- David et al (2009) showed a link between both MLU & CP and measures of vocabulary diversity in L2 French.
- Argued for no link with DP and VP.
- Rogers (2014, 2017?) examined receptive vocabulary size (X-Lex, Meara & Milton 2003) and functional Tense feature (verb movement) in L2 French.
- Verb movement: negation & adverb placement.
- Significant correlations: $r(74) = .704$, $p < .01$.
- vocabulary size accounted for approx. 50% of the variance in verb movement scores ($r^2 = .496$).

A bit about French (vs English)

- French has grammatical gender on nouns (unlike English).
- Gender is divided between masculine and feminine.
- Functional feature on determiners and nouns (DP).
- la [FEM] porte [FEM] (*the door*)

A bit about French (vs English)

- French has grammatical gender on nouns (unlike English).
- Gender is divided between masculine and feminine.
- Functional feature on determiners and nouns (DP).
- la [FEM] porte [FEM] (*the door*)
- In French all verbs appear before adverbs or negation (verb movement) whereas in English only modals and auxiliaries do.
- Functional feature on verbs (TP).
- French: Je regarde souvent la télé (*I watch often TV*).
- English: I often watch TV.

Research Questions

- Is there a relationship between the acquisition of vocabulary and functional features (uninterpretable)?
- If so, how do they interact?

Tasks

- Receptive vocabulary test (X-Lex: Meara & Milton 2003)
- Cloze test (Tremblay 2007)
- Finite Story (Dimroth et al 2010) - written version
- Written story composition task
- Transcribed using CHILDES CHAT conventions.

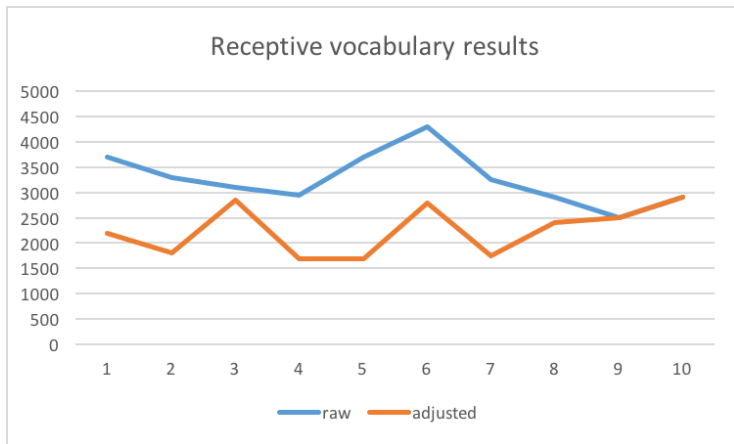
Finite Story: video clip

<http://www.mpi.nl/departments/other-research/research-projects/information-structure-project/tools/the-finite-story>

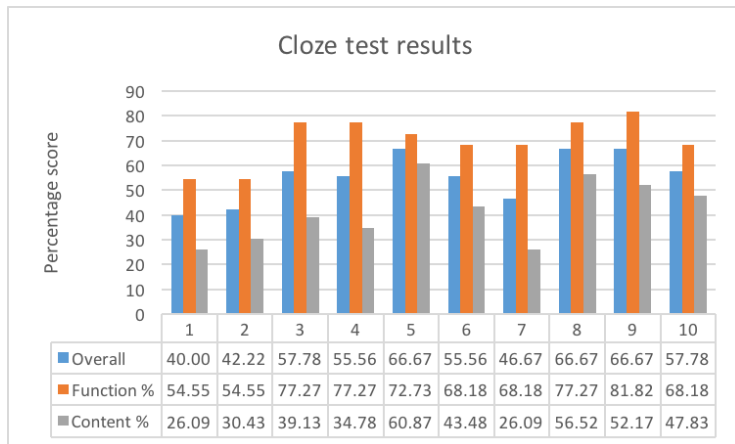
Participants

- 10 learners of French at UK university.
- had all studied French prior to university
- 4 in first year of French at uni, 6 in final year.
- level B1-B2
- 8 female, 2 male
- Paid £10 to participate.

Receptive vocabulary (X-lex)



Cloze test

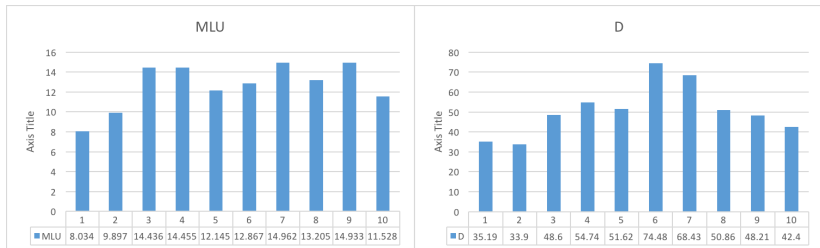


Overall proficiency relationship

- Is there a link between the cloze test and vocabulary size?
- Overall: no significant correlation.
- BUT: raw X-lex score and function words $r = -.655$, $p < .05$.

Finite story general results

- Following David et al (2009) compared lexical density with MLU.
- Significant correlation $r=.638$, $p < .05$



Finite story: Functional features results

DP

- Total number of nouns.
- Correct gender versus incorrect gender versus changing gender.

TP

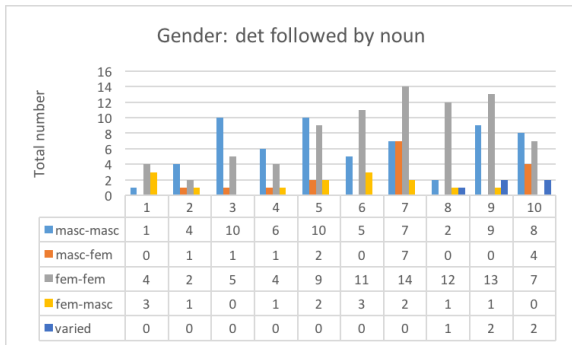
- clear evidence of verb movement (negation, adverbs, quantifiers).

CP

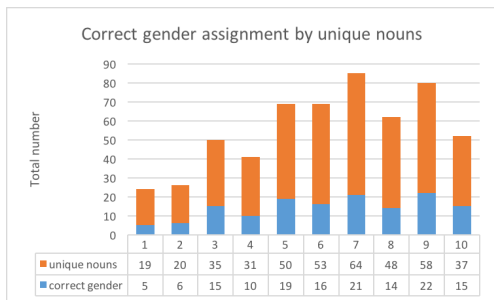
- number of embedded clauses with a relative pronoun.

DP results: Gender Breakdown

- Looked at the determiner and then the noun that followed.
- Excluded plurals, ambiguous, e.g. 'leur porte', 'l'appartement'.



DP results (gender: unique nouns)



- Spearman's correlation between TTR and % correct gender. $r = -.661$, $p < .05$.
- No significant correlations with other vocab measures.
- No correlation between number of unique nouns and % correct gender suppliance. $r = -.333$, $p > .05$.

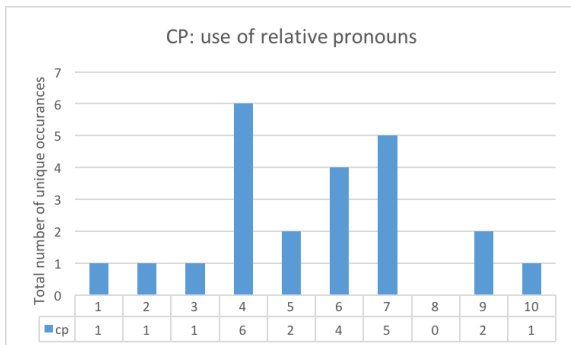
TP results (verb movement) - how it was counted

- Only include clear cases of movement.
- excluded: e.g. 'Tout est bien' (*All is well*)
- included "Monsieur Rouge ne fait rien et il reste encore dans sa maison parce qu'il a peur." (F04) (*Mr Red does nothing and he still remains in his house because he is afraid*).

CP results (embedded clauses): what was counted

- Relative pronouns counted (que, qui, lequel).
- Unique instances - if 'pendant que' used 5 times, counted as 1.
- Example: “les pompiers sont enfin arrivés au bâtiment dans lequel vivent Messieurs Bleu Rouge et Vert”. (*The firemen finally arrived at the building where Misters Blue, Red and Green live*).

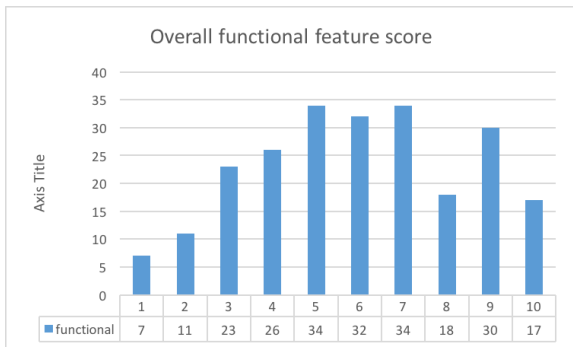
CP Results



- Spearman's correlation between number of CP clauses and lexical density (D) score: $r = .649$, $p < .05$.

Bringing all the results together

- Calculated overall functional feature score (correct gender + verb movement + embedded clauses)
- Spearman's correlation with lexical density (D): $r=.821$, $p < .01$.



Discussion

- Used similar methodology to David et al (2009).
- Showed role of lexical density in the acquisition of functional features.
- Is this enough to show causation?

Discussion

- Used similar methodology to David et al (2009).
- Showed role of lexical density in the acquisition of functional features.
- Is this enough to show causation?
- NO.
- No link between size or nature of lexicon, e.g. correct gender not related to number of nouns etc.

Discussion

- Used similar methodology to David et al (2009).
- Showed role of lexical density in the acquisition of functional features.
- Is this enough to show causation?
- NO.
- No link between size or nature of lexicon, e.g. correct gender not related to number of nouns etc.
- BUT...
- Is there a bottleneck? Something happening with vocabulary that impacts on the syntax?

Limitations

- Small sample size.
- Only analysed one written production task.
- Very conservative counts (nouns, verbs).
- Need more detailed analysis in terms of frequency.

Thank you
Any questions?

Contact details

v.e.rogers@swansea.ac.uk

www.viviennerogers.info



@RogersVivienne



ResearchGate

